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In the Claims

Please cancel claims 13-18 without prejudice. Applicants reserve the right to pursue the original subject matter in a continuing application. Please amend claims 20-26 and add claims 32-41 as follows.

Claims 1-12 (Cancelled)

Claims 13-18 (Cancelled)

19. (Cancelled)

20. (Currently Amended) A composting system ~~including, comprising:~~

a) ~~including an insulated, vertical and parallel sided tower incorporating, the tower including:~~

i) one or more ~~similar~~ chambers for bacterial and fungal breakdown of biodegradable materials ~~at having~~ an infeed moisture content of between fifty and seventy percent (w/w), each of the one or more chambers including:

1) a base; and

2) a mechanical compost removal mechanism fitted to the base, the mechanical compost removal mechanism being configured such that:

A) air is induced into the chamber through the mechanism; and

B) output is removed from the chamber through the mechanism;

b) wherein excess air is induced into the chamber through the mechanical compost removal mechanism at an the aeration rate provided by a naturally induced upward draft due to the energy retained in the composting biodegradable materials biomass by said insulation is insulated tower, the aeration rate being stoichiometrically

matched to biological oxygen demand plus an excess of between three and seven percent, ~~the base of each chamber being fitted with a mechanical compost removal mechanism through which the air is induced and output regularly removed.~~

21. (Currently Amended) A composting system as recited in Claim 20 wherein operation can be continuous with the composting ~~biomass~~ biodegradable materials descending in a plug flow manner using controlled shrinkage and wall pressure relief due to biological ablation of ~~the materials material~~, without internal agitation by mechanical means, during its descent of the materials through the vertical chambers combined with periodic removal of output.

22. (Currently Amended) A composting system as recited in Claim 20 wherein the naturally induced excess air and off gases evolved through biological activity are modulated by a fan with an integral condenser/scrubber for odour control assurance and condensate removal from the off gas ~~stream~~ for disposal or reuse within the chambers to maintain minimum average pile moisture levels of between forty five and fifty percent (w/w) thereby securing the maintenance of a biofilm or matrix particulate moisture coating providing habitat for micro-organisms capable of high temperature gas phase conversions as a food source in high temperature zones and supporting fungal activity in lower temperature zones.

23. (Currently Amended) A composting system as recited in Claim 22 wherein the fan maintains the biofilm or matrix particulate moisture coating such that a majority of high temperature gas phase conversions at the interface of the gas/biofilm are of anaerobically produced normally odorous gases and are carried out by bacteria of pyrophilic and thermophilic genera thus making the composting materials ~~mass~~ largely self filtering in respect of undesirable odours.

24. (Currently Amended) A composting system as recited in Claim 22 wherein ~~there is included the step of maintaining a~~ the fan maintains the biofilm or matrix particulate moisture coating ~~moisture bound biofilm~~ from input to output thereby limiting

the possibility of pyrolysis or fire while encouraging high temperature micro-organism activity.

25. (Currently Amended) A composting system as recited in Claim 20 wherein the aeration rate of the induced excess air through the mechanical compost removal mechanism reduces low air flow rates ~~reduce~~ the cooling effect of incoming air ~~in on~~ the bottom layers of the biodegradable materials, giving high thermal efficiency to the biodegradable materials at the effective working height.

26. (Currently Amended) A composting system as recited in Claim ~~25~~ 22 wherein the aeration rate of the induced excess air through the mechanical compost removal mechanism ~~low air flow rates reduce the cooling effect of incoming air in the bottom layers giving high thermal efficiency at the effective working height and thereby promoting~~ promotes fungal attack of remaining organic matter in the lower temperature bottom layers.

27. (Previously Presented) A composting system comprising:
a continuous-flow vertical composting tower having one or more compartments;
and
a base of each compartment fitted with a grate through which output is removed and a plenum through which air is induced wherein a biomass for composting having an initial moisture content of 60-80 % wt./wt. of the total biomass descends through the tower to provide an operating temperature of 45-85 °C.

28. (Previously Presented) A continuous-flow vertical composting system comprising:
a vertical composting tower;
a grate at a base of the tower through which output is removed;
a plenum at the base of the tower through which airflow is induced; and
a biomass for composting introduced at a top portion of the tower wherein the biomass has a moisture content of 60-80 % wt./wt. of the total biomass and descends

through the tower to provide an operating temperature of 45-85 °C and the airflow provides an oxygen content equal to BOD plus an excess of 3 % to 7%.

29. (Previously Presented) A composting system according to claim 20 wherein the biomass comprises green waste and sludge.

30. (Previously Presented) A continuous-flow vertical composting system according to claim 21 wherein the airflow is naturally induced by retained pile energy.

31. (Previously Presented) A composting system according to claim 20 wherein the biomass has an active moisture bound biofilm.

32. (New) A composting system according to Claim 27 wherein the vertical composting tower has vertical, parallel sides.

33. (New) A composting system according to Claim 27 wherein the plenum is constructed such that the air is self-induced into the compartment of the tower.

34. (New) A composting system according to Claim 27 wherein the air induced into the compartment flows through the grate.

35. (New) A composting system according to Claim 34 wherein the grate is located between the plenum and the biomass, the plenum being configured to open to permit the removal of output from the compartment.

36. (New) A composting system according to Claim 27 wherein the grate is an oscillating grate.

37. (New) A composting system according to Claim 28 wherein the vertical composting tower has vertical, parallel sides.

38. (New) A composting system according to Claim 28 wherein the plenum is constructed such that the airflow is self-induced into the compartment of the tower.
39. (New) A composting system according to Claim 28 wherein the airflow induced into the compartment first flows through the grate.
40. (New) A composting system according to Claim 39 wherein the grate is located between the plenum and the biomass, the plenum being configured to open to permit the removal of output from the compartment.
41. (New) A composting system according to Claim 28 wherein the grate is an oscillating grate.